

**FUTURE FISHERIES IMPROVEMENT PROGRAM
GRANT APPLICATION**

(please fill in the highlighted areas)

I. APPLICANT INFORMATION

A. Applicant Name: Carl Johnson

B. Mailing Address: 911 Tumbleweed Lane

C. City: Deer Lodge State: MT Zip: 59722

Telephone: 406-846-1378

D. Contact Person: Will McDowell, Watershed Restoration Coalition

Address if different from Applicant: 1002 Hollenback Rd.

City: Deer Lodge State: MT Zip: 59722

Telephone: 406-396-7716

E. Landowner and/or Lessee Name
(if other than Applicant):

Mailing Address:

City: State: Zip:

Telephone:

II. PROJECT INFORMATION*

A. Project Name: Johnson Diversion Replacement

River, stream, or lake: Racetrack Creek, Clark Fork River drainage

Location: Township T10N Range R7W Section 12

County: Powell County

B. Purpose of Project:

The purpose of this project is to replace a rustic irrigation diversion which blocks upstream fish passage in low water with a fold-down diversion and fish ladder. This project will benefit fluvial brown trout, mountain whitefish, westslope cutthroat and other native fish in an FWP high-priority restoration watershed due to its important spawning and rearing habitat for sport and native fish.

C. Brief Project Description:

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The Johnson Diversion is located in lower Racetrack Creek above the Interstate Highway 90 and just below Yellowstone Trail. Replacing this diversion, as part of a larger fish passage/in-stream flow scheme for lower Racetrack, will improve habitat access and reduce summer mortality for salmonids throughout the lower six miles of this watershed. This diversion is located approximately two miles above the confluence of Racetrack with the Clark Fork River. Lower Racetrack Creek is one of the most productive fluvial brown trout spawning areas in the entire Upper Clark Fork drainage. Mountain whitefish, westslope cutthroat trout (hybridized genetics) and other salmonids (including bull trout through at least the 1980s) also use the Racetrack drainage.

Opening new habitat to salmonids in summer and fall could increase trout mobility and access to groundwater-fed temperature refuges near the Interstate Highway when dewatering and temperature stress peak in July/August, reduce trout mortality during that period, and also open new areas to brown trout spawning in October/November. According to an inventory by Trout Unlimited in 2010, three irrigation fish passage barriers currently exist which restrict salmonid mobility in the lower watershed. The lowest blocking structure, the Evan Johnston diversion, will be replaced in winter-spring 2014 with a fish ladder and folding wooden diversion.

The Carl Johnson diversion is the next barrier upstream. This dam consists of T-posts and tarps and sections of tin roof sealed with plastic sheeting and tarps. A makeshift headgate of logs and tarps controls ditch flow. In high flows, some larger fish may be able to scale the Johnson diversion, but it would require a jump of more than two vertical feet from a shallow riffle below the diversion—ad smaller fish are excluded by the tarps. The new diversion would be a folding wooden diversion (figure 4 type) with Denil fish ladder, a simple wooden headgate and a screw-type gate for sluicing sediment. This new diversion would be folded down in late summer or early fall when the Johnson water right goes out of priority.

The next diversion upstream is the Berg Diversion. Modifying the E. Johnston, C. Johnson (this project) and Berg Diversions will open the lower six miles of Racetrack Creek to movement of salmonids throughout the year. The WRC and partners are also in conversations with J. Berg to modify his diversion, which often takes a majority of the stream's flow, for better fish passage. The CF Coalition, a WRC partner, has purchased a 433 ac-ft storage water right in Racetrack Lake which will be converted to in-stream flow to relieve the current dewatering crisis below the Berg diversion, where numerous trout are often trapped in isolated pools in August.

The WRC will work closely with the Natural Resource Conservation Service (NRCS) to execute this project. Carl Johnson applied to the NRCS for EQIP funding for this project, and it was rated highly in 2012, and is expected to be highly rated this year. Mr. Johnson ultimately did not sign a contract in 2012-13 due to a need for match funding. Mr. Johnson needs more match funding to afford the diversion upgrade, and has reapplied to NRCS this year. The Future Fisheries grant would provide the match funding to allow this project to go forward in 2014.

D. Length of stream or size of lake that will be treated: Racetrack Creek is 23 miles long.

E. Project Budget:

Grant Request (Dollars): \$ 10,100

Contribution by Applicant (Dollars): \$ 1800 In-kind \$ 0
(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): \$ 10,600 In-kind \$ 1200

(attach verification - See page 2 budget template)

Total Project Cost: \$ **\$23,700**

- F. Attach itemized (line item) budget – see template
- G. Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).
- H. Attach land management and maintenance plans that will ensure protection of the reclaimed area.

III. PROJECT BENEFITS*

- A. What species of fish will benefit from this project?:

Brown trout, mountain whitefish, westslope cutthroats (not pure), longnose sucker, slimy sculpin.

- B. How will the project protect or enhance wild fish habitat?:

The project will enhance wild trout habitat by providing upstream and downstream fish passage between the lower and middle portions of Racetrack Creek drainage. It is part of an integrated fish passage, habitat and in-stream flow restoration effort on Racetrack Creek involving WRC, Clark Fork Coalition, Trout Unlimited and landowners.

- C. Will the project improve fish populations and/or fishing? To what extent?:

We expect the project to reduce mortality of trout during high water temperature stress conditions in late summer, and improve access of fluvial brown trout to under-utilized spawning grounds in middle Racetrack Creek. In combination with associated passage and in-stream flow projects, the impact on populations could be substantial.

- D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

We hope to see an increase in fluvial brown trout utilization of this reach of Racetrack Creek for spawning. This could increase brown trout populations in the Upper Clark Fork since Racetrack Creek is such an important spawning stream for fluvial browns. Limited habitat in lower Racetrack (due to barriers) has led to superimposition of redds in the past.

- E. If the project requires maintenance, what is your time commitment to this project?:

The landowner, Carl Johnson, will do all needed maintenance on the project. He is familiar with the maintenance of irrigation diversion structures and headgates and has inspected his neighbor's fold-down diversion and fish ladder (

What was the cause of habitat degradation in the area of this project and how will the project

- F. correct the cause?:

Racetrack Creek has good water quality and some excellent habitat in its lower six miles. The limitations are dewatering in mid- to late summer and elevated water temperatures. Since other projects are addressing the in-stream flow issue, this project will build on those efforts by providing fish passage to access all of the habitat features for two miles upstream (to Berg diversion) and downstream to the groundwater-fed lower portion of the creek (cold water refuge habitat).

G. What public benefits will be realized from this project?:

The public can benefit from better survival of resident brown trout and other salmonids and native fish in the lower Racetrack watershed, and from potential improved production of fluvial brown trout which are accessing a larger habitat area.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No.

I. Will the project result in the development of commercial recreational use on the site?: (explain):

No. The water right holder, C. Johnson, irrigates from Racetrack Creek, but his property does not actually bound Racetrack Creek at any point.

J. Is this project associated with the reclamation of past mining activity?:

No.

Each approved project sponsor must enter into a written agreement with the Department specifying terms and duration of the project.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature:

Carl A. Johnson

Date:

11-27-13

Sponsor (if applicable):

***Highlighted boxes will automatically expand.**

Mail To:

Montana Fish, Wildlife & Parks
Habitat Protection Bureau
PO Box 200701
Helena, MT 59620-0701

Incomplete or late applications will be returned to applicant.
Applications may be rejected if this form is modified.

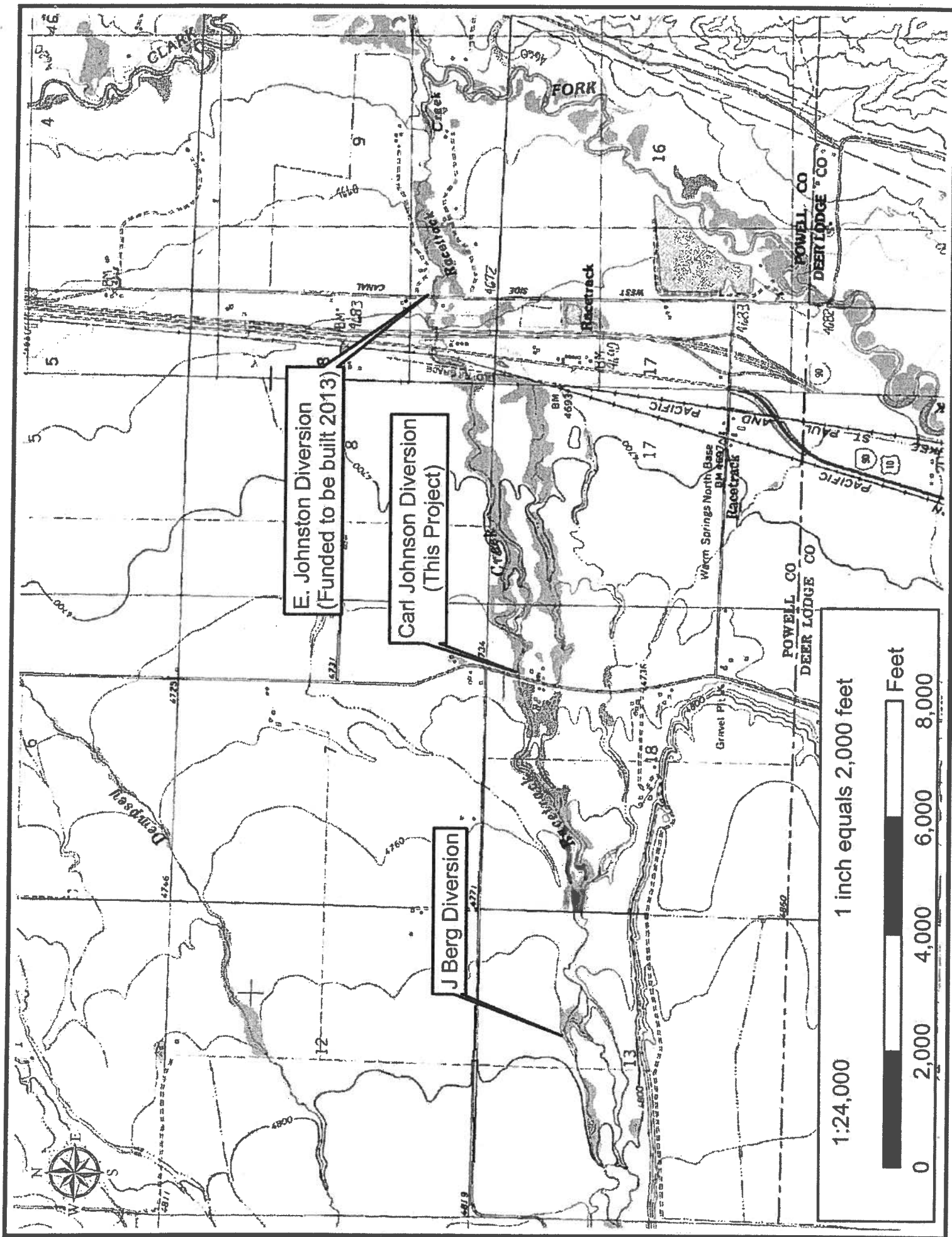
Applications may be submitted at anytime, but must be received by the Future Fisheries Program office in Helena before December 1 and June 1 of each year to be considered for the subsequent funding period.

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS
(Revised 11/27/2013)

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*Units = feet, hours, inches, lump sum, etc.

CONTRIBUTOR	IN-KIND SERVICE	IN-KIND CASH	TOTAL
NRCS EQUIP			
WRC	\$ 1,200.00	\$ 10,600.00	\$ 11,800.00
Carl Johnson, applicant			
	\$ -	\$ 1,800.00	\$ 1,800.00
	\$ -	\$ -	\$ -
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TOTAL:	\$ 1,200.00	\$ 12,400.00	\$ 13,600.00





**Montana Fish,
Wildlife & Parks**

P.O. Box 25
Anaconda, MT 59711
Phone: (406) 563-7435
E-mail: jilindstrom@mt.gov

May 31, 2013

Montana Fish, Wildlife & Parks
Future Fisheries Program, Attn: Mark Lere
PO Box 200701
Helena, MT 59620

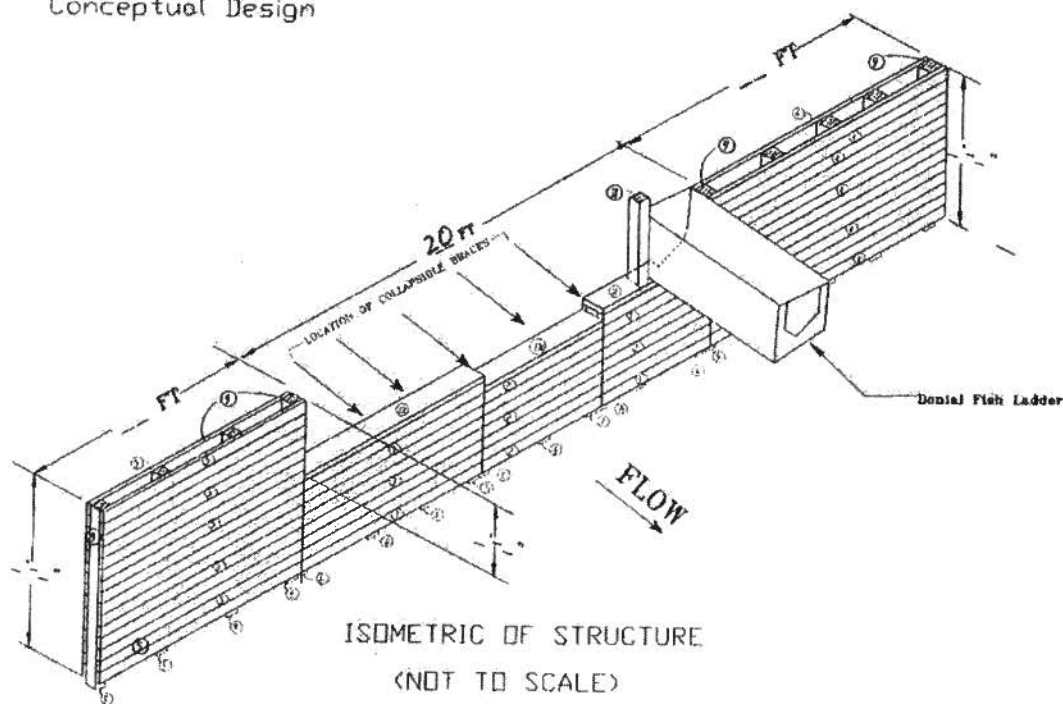
RE: Support for Johnson Diversion Replacement and Fish Screen Project on Racetrack Creek

I would like to offer my support for the Johnson Diversion Replacement Project on Racetrack Creek proposed by Carl Johnson and the Clark Fork Coalition. Based on recent studies conducted by FWP in coordination with the Natural Resource Damage Program, Racetrack Creek has been identified as a high priority stream for fishery restoration. It is a major tributary to the upper Clark Fork River and the lower reaches provide important spawning and rearing habitat for brown trout and other sport and native fish species. Recent radio telemetry work has documented a number of radio tagged brown trout spawning in the lower reach of Racetrack Creek near where this project would take place. Protecting fish from entrainment as well as providing for fish passage is very important in this reach of the stream. I encourage you to support this application. Please feel free to contact me with any questions.

Sincerely,

Jason Lindstrom
Upper Clark Fork Fisheries Biologist
Montana Fish, Wildlife & Parks

Carl Johnson Racetrack Diversion
Conceptual Design



Carl Johnson



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ISOMETRIC VIEW

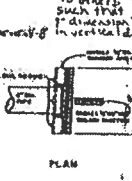
ISOMETRIC VIEW
FLASHBOARD BRACES RAISED
TYPICAL INSTALLATION ON WOOD STRUCTURE
SHOWN MAY BE USED ON CONCRETE STRUCTURES



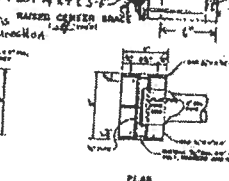
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PLAN



PLAN



PLAN



FLASHBOARD, BRUCE
GOTTEN 2/20/62



BRACE DETAILS



FIVE BRACE

218

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SPACES TO BE SPACED @ SAME SPACING
AS THIS ONE

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Racetrack Creek — Johnson Diversion

Location: 46.2795900, -112.7707100

Date surveyed: 7/28/2011

Type of diversion: T-posts, sheet metal, plastic sheeting, tarps, logs and rocks

Spillway type: Through diversion

Diversion span: 100% of channel Length: 34.0 ft Height: .5-3.0 ft

Estimated amount of water diverted at time of survey: <10%

Water velocity through diversion: Maximum: Unk Minimum: Unk

Water surface difference: 0.8 ft Maximum plunge pool depth: riffle

Maximum tailwater control depth: riffle Residual pool depth: riffle

Plunge pool distance from outlet: N/A Tailwater control distance from outlet: N/A

Bankfull width: Inlet: 17.0 ft Outlet: 16.0 ft

Upstream Fish Passage Structure: N Fish Screen: N

Lockable Headgate: N Flow Measurement Device: Y

Streamflow Measurements

Location	Streamflow (cfs)
Upstream from diversion	N/A
In diversion ditch	N/A
Downstream from diversion	N/A

Fish Entrainment Data

Number of fish captured	5
Fish species captured	brown trout (5)
Entrainment survey date	7/27/2011

General Comments— The Johnson diversion located adjacent to Yellowstone Trail consists of a temporary dam built across Racetrack Creek with T-posts supporting sections of tin roof and sealed with plastic sheeting and tarps. A makeshift headgate of logs and tarps on the left bank controls flows down the ditch. A bypass returning water to the creek located approximately 50 meters down the ditch provides additional control of the flow down the irrigation ditch.

Fish Passage— The Johnson diversion does present an obstacle to upstream fish passage-- essentially a wall across the channel requiring fish to either make their way through gaps in the structure to jump over it. Swimming through the structure may be possible for small fish however it is relatively well-sealed by plastic and it appears that much of the flow through the structure seeps under it through bed material. Larger fish may jump over the wall however a jump of 2+ ft is required from the shallow riffle below the diversion to clear it. The diversion ditch also presents an entrainment risk to fish moving downstream—particularly at low flows when the structure effectively blocks the entire channel and funnels all fish down the ditch.

Recommendations— We recommend installation of a permanent diversion structure that allows for year-round fish passage and water delivery for the irrigator as well as installation of a permanent

headgate on the ditch to allow for better control of flows into the ditch. Additional evaluation of entrainment after installation of the new structure may be necessary to evaluate the relative need for future screening of the irrigation ditch.

